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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10-046,282	01/16/2002	Chul-Hwan Choi	SEC.863	3589

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EXAMINER

PHAM, MINH CHAU THI

ART UNIT

PAPER NUMBER

1724

DATE MAILED: 06/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/046, 282

Applicant(s)

CHOI ET AL

Examiner

PHAM

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL** 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11 is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected. 1, 2 and 7-10
- 7) ☒ Claim(s) 3-6 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other

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Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1, 2 and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lorimer (5,334,237; Abstract: 14, 16, 18, 20 & 26 in Fig. 1; 50, 52, 54, 56, 58, 60, 64 & 70 in Fig. 2; col. 1, lines 8-11; col. 2, lines 1-21; col. 4, lines 3-27 and lines 61-66; col. 5, line 11 through col. 6, line 3).

Lorimer discloses a residual gas removing device for a gas supply apparatus in a semiconductor fabricating facility comprising a valve disposed between a mass flow controller and

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a chamber and the valve being operative for cutting off or supplying gas from the mass flow controller to the chamber, a gas inlet line connecting the mass flow controller and the valve, and a gas removing apparatus in flow communication with the gas inlet line of the valve to remove or to vent the residual gas in the inlet line. The residual gas removing device further comprises a bypass valve connected to the gas inlet line of the valve to vent the residual gas in the gas line. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide a residual gas removing device as taught by Lorimer to provide an effective venting mechanism for a gas purification system used to provide highly purified gases for use in semiconductor manufacturing equipment.

Allowable Subject Matter

3. Claims 3-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
4. The following is a statement of reasons for the indication of allowable subject matter: None of the prior arts discloses a pump connected to the fore line vent valve for pumping the residual WF6 gas through the fore line vent valve.
5. Claim 11 allowed.
6. The following is an examiner's statement of reasons for allowance: None of the prior arts discloses a method of removing a residual gas remaining in a gas inlet connecting a mass flow

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controller and a chamber comprising the step of opening a vent valve connected to another end of the gas inlet line and pumping the residual gas through the vent valve and into the atmosphere.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Succi et al (6,168,645 B1) disclose a safety system for gas purifier.
- Spiegelman et al (6,514,313 B1) disclose a gas purification system.
- Ikeda et al (6,196,050 B1) disclose a method of removing siloxanes from silicon compound gases.
- Lorimer et al (6,068,685) disclose a semiconductor manufacturing system.
- Campbell et al (Re. 34,434) disclose an oxygen enriched air system.
- Kawai (4,857,086) discloses a gas separator system.
- McCombs et al (4,561,865) disclose a gas separation system.

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- Briesacher et al (5,238,469) disclose an apparatus for removing residual hydrogen from a purified gas.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh-Chau Pham whose telephone number is (703) 308-1605. The examiner can normally be reached on Monday-Friday (except Wednesday) from 7:15 a.m. to 5:45 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Duane Smith, can be reached on (703) 308-3792. The fax phone number for this Group is (703) 872-9310 (non-finals) or (703) 872-9311 (after-finals).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.



Minh-Chau Pham

Patent Examiner

May 29, 2003